

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/574,027

Examiner: Aaron Robert Eastman

Applicants: Ian David Stones et al.

Art Unit: 3745

Title: VACUUM PUMP

Confirmation No.: 8027

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir/Madam:

Applicants appeal the final rejections of all pending claims 48-64, which are rejected under 35 USC 103(a) as being unpatentable over US Patent No. 5,733,104 to Conrad et al. (hereinafter referred to as “Conrad”) in view of US Patent No. 5,695,316 to Schutz et al. (hereinafter referred to as “Schutz”).

BACKGROUND

The invention as described in independent claim 48 is directed to a compound multi-port vacuum pump. One example of such pump is illustrated in FIG. 2 of the application where pump 100 comprises a first pumping section 106, second pumping section 108, and third pumping section 112. The pump 100 comprises a first pump inlet 120 through which fluid can enter the pump and pass through each of the pumping sections towards a pump outlet 116, a second pump inlet 122 through which fluid can enter the pump and pass through only the second and third pumping sections 108 and 112 towards the outlet 116, and an optional third pump inlet 126 through which fluid can enter the pump and pass through only the third pumping section 112 towards the outlet 116. The pump 100 further comprises a forth inlet 124 through which fluid can enter the pump and pass through only part of the third pumping section 112 towards the outlet 116.

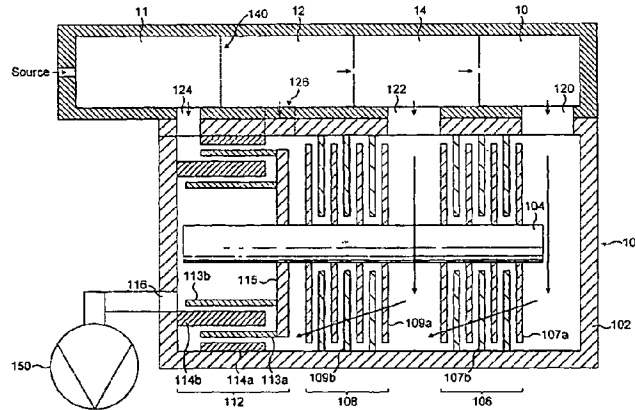


FIG. 2

The claimed invention eliminates a fluid path that would otherwise exist directly between chamber 11 and backing pump 150. One advantage of the invention is that, by enabling the fluid to be directly pumped by the compound multi-port vacuum pump 100, instead of the backing pump 150, the pump 100 can manage more than 99% of the total fluid flow without increasing the size of the backing pump 150. *See, the specification, page 11, lines 14-22.*

In paragraphs 1 and 5 of the Office Action, the Examiner acknowledges that neither Conrad nor Schutz teach the claim limitation “a fourth inlet through which fluid can enter the pump and pass through only part of the third pumping section towards the outlet.” However, in paragraph 7 of the Office Action, the Examiner asserts:

It would have been obvious to one having ordinary skill in the art at the time the invention as made to modify the apparatus of Conrad et al. by adding a Gaede pump section in combination with and immediately downstream of the Holweck pump to create a pumping section as taught in Schutz et al. for the purposes of increasing pump effectiveness. This results in a fourth inlet (17) through which fluid can enter the pump and pass through only part (the Gaede pump portion) of the third pumping section towards the outlet.

ISSUES

Absent explicit teachings from Conrad and Schutz, whether the Examiner errs in asserting that it would have been obvious for a person skilled in the art to modify the

references to create “a fourth inlet through which fluid can enter the pump and pass through only part of the third pumping section towards the outlet.”

DISCUSSION

I. In order for the Examiner to establish a prima facie case of obviousness, there must be some suggestion or motivation in Conrad and Schutz, or in the knowledge generally available to one of ordinary skill in the art, to modify the references to create “a fourth inlet through which fluid can enter the pump and pass through only part of the third pumping section towards the outlet.”

To establish a prima facie case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991). Here, the Examiner asserts that it would have been obvious for a person skilled in the art to modify the Conrad and Schutz to create “a fourth inlet through which fluid can enter the pump and pass through only part of the third pumping section towards the outlet.” In order for the assertion to be appropriate, according to In re Vaeck, there must be some suggestion or motivation, either in Conrad and Schutz, or in the knowledge generally available to one of ordinary skill in the art, to modify the references as the Examiner suggests.

II. Neither Conrad nor Schutz provides sufficient suggestion or motivation to modify the references as the Examiner suggests.

There is no suggestion or motivation in Conrad to make the modification as the Examiner suggests. Conrad is about a multi-stage vacuum pump (as shown in FIG. 2 below) that can be mathematically modeled for improved operational control. One of the premises of the mathematical model is that all the suction connections are placed between individual stages. For example, Conrad’s objective is achieved by “providing a vacuum pump system..., in which the suction connections, provided between the individual stages, are dimensioned and arranged as a function of the pressure relationships...” *See, col. 1, lines 54-64*. The emphasis that the suction connections must be made between individual stages is repeated through out Conrad. Modifying Conrad by attaching the

suction connection to the middle of a stage in order to run fluid partially through the stage is not factually suggested or motivated by the reference. Moreover, changing the location of suction connections would distort the mathematical model expressed by equations (1)-(6) in Conrad, and therefore move away from the teaching of the reference.

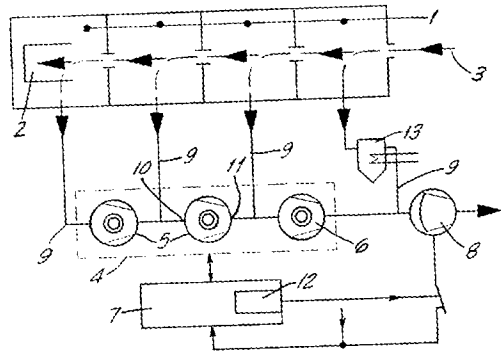


Fig. 2

Neither does Schutz suggest or motivate the modification as the Examiner suggests. For example, the inlet 12 of pump 1 as shown in FIG. 9 clearly results in gas flowing through the entire pump, as opposed to just part of it.

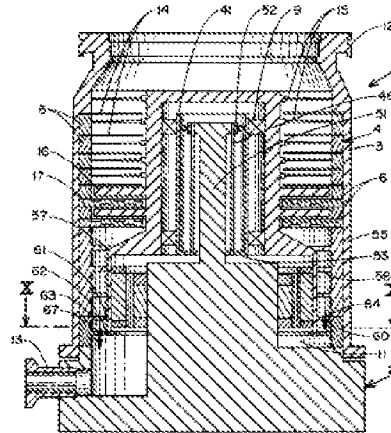


FIG. 9

III. The Examiner's proposed modification is not generally known to a person of ordinary skill in the art.

A statement that modification of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. *In re Kotzabm* 217 F.3d

1365, 1371 (Fed. Cir. 2000). Applicants respectfully contend that the Examiner's assertion is merely a conclusory statement without support of convincing evidence or objective reasons.

It's Applicants' understanding that conventional multi-port vacuum pump arranges the gas inlets and outlets in a way that gas would run through an entire stage from the inlet to the outlet. *See, the specification, page 2, lines 10-14 and FIG. 1*. This is also true when a backing pump is used to support the multi-port vacuum pump. *See, the specification, page 2, lines 14-22*.

CONCLUSION

As discussed above, the Examiner's proposed modification is not suggested or motivated by the references or the general knowledge available to a person skilled in the art at the time when the invention was made. Thus, the rejection against claim 48 is improper. Since claims 49-64 depend from claim 48, the rejections against them are improper as well.

As such, Applicants respectfully request that the rejections be reversed.

Respectfully submitted,

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